UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/815,401	03/31/2004	Pierre Guillaume Raverdy	80398P594	7970

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EXAMINER
CHU, WUTCHUNG

ART UNIT	PAPER NUMBER
2616	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

		Application No.	Applicant(s)
Office Action Summary		10/815,401	RAVERDY ET AL.
		Examiner	Art Unit	
		Wutchung Chu	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after t he mailing date of this communication, even if timely filed, may re duce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>31 March 2004</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-40* is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>31 March 2004</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a)☐ All   b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>9/20/2004</u>.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2.   Claim 1, 3-8, and 10-13, 15-20, and 22-25, 27-32, and 34-36 is rejected under 35

U.S.C. 102(e) as being anticipated by Ayyagari (US20040174829).

Regarding claims 1, Ayyagari discloses a centralized network organization and

topology discovery in ad-hoc network with central controller **(see paragraph 5)**

comprising:

- a frame module **(see paragraph 25 central coordinator(Cco))** to process

    a frame containing information regarding a local node in a first network,

    the information including discovery information and network state

    information **(see paragraph 64 line 12)**, the discovery information being

    represented in a common description **(see paragraph 55 line 1 – 9 and**

    figure 5 and figure 6);

- an information module coupled to the frame module to manage the

    information **(see paragraph 55 line 1 – 9)**; and

- a communication module coupled to the frame module and the information module to manage communication between the local node and a remote node in a second network using the information **(see paragraph 43 line 7-10 and figure 1 ref 40)**.

Regarding claim 3, Ayyagari teaches the frame receiver forwards the received remote frame to the communication module if the received remote frame is related to the network communication **(see paragraph 88 beacon message)**.

Regarding claim 4, Ayyagari teaches the frame receiver forwards **(see paragraph 89 line 7-10)** the received remote frame to the information module of the local node, to another local node in the first network, or to another remote node if the received remote frame is related to information exchange and meets an acceptance condition **(see paragraph 89 line 5-7)**.

Regarding claim 5, Ayyagari teaches the acceptance condition is based on a forwarding number and propagation parameters including a propagation list and a propagation type, the forwarding number and the propagation type being contained in the frame **(see paragraph 89 line 1-5 and paragraph 91 line 3 T_discovery_interval)**.

Regarding claim 6, Ayyagari teaches the information module comprises:

- a collector to collect the information **(see paragraph 113)**;

- a translator coupled to the collector to translate the discovery information into the common description **(see figure 6 and paragraph 66 line 10-11)**;

- a node selector coupled to the collector to determine if the local node participates in the communication based on the network state information of the local node and other network state information from another local node in the first network **(see paragraph 100 and paragraph 116)**; and

- a synchronizer to synchronize the collected information with other information from other local nodes in the first network **(see paragraph 101 and paragraph 117)**.

Regarding claim 7, Ayyagari teaches the information module further comprises:

- an information table to store entries regarding information extracted from a received remote frame **(see paragraph 76 topology table)**; and

- an information table updater to update the entries **(see paragraph 84)**.

Regarding claim 8, Ayyagari teaches the communication module comprises:

- a usage evaluator to evaluate network usage to determine relative location of the second network based on an interference list from the network state information **(see paragraph 118 line 3-6 and paragraph 147)**;

- a channel migration evaluator to evaluate a channel allocation layout **(see paragraph 118 line 6-11 quality indicator)**;

- a channel change controller to control a channel change based in the channel allocation layout **(see paragraph 118 line 8-10)**; and

- a channel changer to change channel of the local node according to a wireless mode used by the node **(see paragraph 118 line 8-10 and paragraph 121 line 1)**.

Regarding claim 10, Ayyagari teaches the discovery information includes information on at least node device **(see figure 1 ref20 ref 30)**, node service **(see paragraph 46)**, and user **(see figure 1 ref20 ref 30)**.

Regarding claim 11, Ayyagari teaches the network state information includes at least one of network configuration **(see paragraph 70)**, network status **(see paragraph 64 line 12)**, network history, and an interference list.

Regarding claim 12, Ayyagari teaches the interference list includes at least a network from which the local node receives a beacon or directly receives a remote frame from the remote node **(see paragraph 46)**.

Regarding claims 13, 15-20, and 22-24, Ayyagari disclose all the limitations as discussed in the rejection of apparatus claims 1, 3-8, and 10-12 and are therefore method claims 13, 15-20, and 22-24 are rejected using the same rationales.

Regarding claims 25, 27-32, and 34-36, Ayyagari teaches a self-organizing ad-hoc communication networks **(see paragraph 4 it is inherent devices (nodes) are computerized and is functioned by a set data)** and disclose all the limitations as

discussed in the rejection of apparatus claims 1, 3-8, and 10-12 and are therefore article

or manufacture claims 25, 27-32, and 34-36 are rejected using the same rationales.

Regarding claims 37-40, Ayyagari disclose all the limitations as discussed in the

rejection of apparatus claims 1-2, 6, and 8 and are therefore apparatus claims 37-40 are

rejected using the same rationales.

Claim Rejections - 35 USC § 103

3.   The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1.   Determining the scope and contents of the prior art.
2.   Ascertaining the differences between the prior art and the claims at issue.
3.   Resolving the level of ordinary skill in the pertinent art.
4.   Considering objective evidence present in the application indicating obviousness or nonobviousness.

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5.   Claims 2,9, 14, 21, 26, and 33 rejected under 35 U.S.C. 103(a) as being

unpatentable over Meier et al. (US6826165).

Regarding claim 2, Ayyagari teaches the frame module comprises:

- a frame builder to build the frame containing the information **(see**

  paragraph 64);

- a frame transmitter coupled to the frame builder to transmit the frame to another local node in the first network or the remote node in the second network **(see Ayyagari paragraph 121 activity indicator)**;

- a frame receiver to receive another frame from another local node in the first network or to receive a remote frame from the remote node **(see Ayyagari paragraph 121 activity indicator)**;

and disclose all the subject matter of the claimed invention with the exception of

- a frame poller coupled to the frame transmitter to provide a polling frame requesting for information of the remote node.

Meier et al. from the same or similar fields of endeavor teaches the use of polling packet **(see Meier et al. column 3 line 46-50)**. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the polling packet as taught by Meier in the centralized network organization and topology discovery in ad-hoc network with central controller of Ayyagari in order to increase efficiency of the transmission system.

Regarding claim 9, Ayyagari disclose all the subject matter of the claimed invention with the exception of the channel migration evaluator evaluates an alternate layout based on a relationship between interference and channel distance. Meier et al. from the same or similar fields of endeavor teaches the use of determining the distance from the root node **(see Meier et al. column 5 line 14 –30)**. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the determining the distance from the root node as taught by Meier et al. in ad-hoc network

with central controller of Ayyagari in order to increase efficiency of the transmission

system.

Regarding claims 14, 21, 26, and 33, Ayyagari disclose all the limitations as

discussed in the rejection of apparatus claims 2 and 9 and are therefore apparatus

claims 14, 21, 26, and 33are rejected using the same rationales.

Conclusion

6.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

Olkkonen et al. (US2005/0088980) disclose ad hoc network discovery menu.

Schmitz (US6665269) disclose method and apparatus for filtering netowkr traffic based

on the correct channel in an IEEE 802.11(b) wireless LAN.

Kennedy et al. (US2004/0218548) disclose predictive routing in a mobile ad hoc

network

Ryu et al. (US6791949) disclose network protocol for wireless ad hoc network.

Herrmann et al. (US2003/0151513) disclose self-organizing hierachical.

7.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Wutchung Chu whose telephone number is 571 270

1411. The examiner can normally be reached on Monday - Friday 1000 - 1500EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Edan D. Orgad can be reached on 571 272 7884. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/WC/
Wutchung Chu

**EDAN ORGAD
PRIMARY PATENT EXAMINER**